Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Smithville Lake

Waterbody Segment at a Glance:


State map showing location of watershed

Counties: Clinton and Clay
Nearby Cities: Kansas City, Smithville, Plattsburg, Kearney
Area of impairment: 7,190 acres
Pollutant: Atrazine
Source: Corn & Sorghum production

Note: The lake is proposed for deletion from the 2002 303(d) List. A Mercury impairment is being added. See Mercury Information Sheet for more information.

TMDL Priority Ranking: Medium

Description of the Problem

Beneficial uses of Smithville Lake

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption
- Boating and Canoeing
- Whole Body Contact
- Drinking Water Supply

Use that is impaired

- Drinking Water Supply

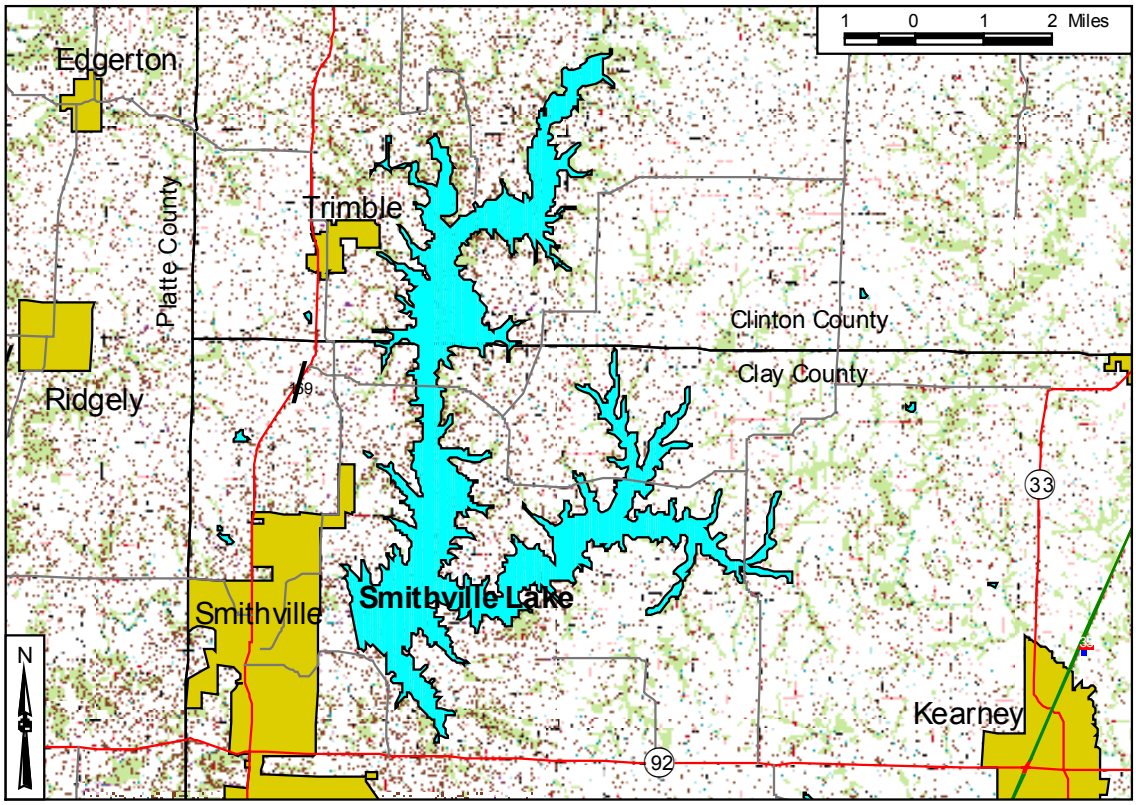
Standards that apply

The impairment of this lake is based on exceedence of the specific criterion of 3 micrograms per liter (µg/L or parts per billion) atrazine, as an average of the period of record, contained in Missouri's Water Quality Standards. 10 CSR 20-7.031 Table A.

In 1965, the Little Platte River flooded and covered the town of Smithville to a depth of 12 feet, and caused $30 million in damages. As a result, the United States Army Corps of Engineers constructed Smithville Lake to control further flooding. The dam was completed in 1977 at a cost of $68 million. The lake has a drainage area of 213 square miles and covers 18 miles of the Little Platte valley. Smithville Lake is a drinking water source for the towns of Plattsburg and Smithville. Monitoring over the last decade has found that concentrations of atrazine frequently exceed state drinking water standards. Atrazine is considered a possible human carcinogen, so the state standard

is set at the very low level of three micrograms per liter (µg/L) or parts per billion. Atrazine is a widely used herbicide for control of broadleaf weeds. It is the most heavily used herbicide used on corn and grain sorghum in Missouri. Since 1993, its uses have been greatly restricted. Runoff from corn and sorghum production areas in the watershed has resulted in measurable amounts of atrazine being detected within the lake. In the last few years, atrazine levels in Smithville Lake have been lower and the long term average is now 2.53 µg/L. Therefore, the lake is being proposed for deletion from the 303(d) list. The following information contains a map of the lake area and tables of the existing data.

Smithville Lake near Smithville in Clinton and Clay Counties, Missouri



Yearly Atrazine Levels in Smithville Lake, 1995-1999
(µg/L)

Year (months)	Average	Range
1995 (2-12)	2.85	1.7-4.7
1996 (1-11)	5.03	4.5-6
1997 (1-11)	3.56	2.5-4.8
1998 (1-12)	1.93	0.7-2.8
1999 (1-12)	1.1	0.8-1.5

Source: Novartis Inc.

Monthly Atrazine Levels in Smithville Lake, 1995-1999
(µg/L)

Month (years)	Average	Range
January (1996-1999)	3.13	1.3-5
February (1995-1999)	3.02	1.1-4.5
March (1995-1999)	2.51	0.8-4.8
April (1995-1999)	2.52	0.8-4.8
May (1995-1999)	2.5	1.5-4.8
June (1995-1999)	2.86	0.8-5.2
July (1995-1999)	2.94	1.4-6
August (1995-1999)	3.4	1.4-6
September (1995-1999)	3.24	1.2-5.2
October (1995-1999)	2.96	0.8-4.5
November (1995-1999)	3.04	1-4.7
December (1995, 1998-1999)	2.07	0.7-4.5

Source: Novartis Inc.

Atrazine in Smithville Lake, 1997-2000
(µg/L)

January, 1997	2.4
February, 1997	2.3
April, 1997	2.14
May, 1997	1.94
June, 1997	2.36
August, 1999	0.69
December, 1999	0.63
March, 2000	0.54
June, 2000	0.61
September, 2000	0.65

Source: Missouri Department of Natural Resources

For more information call or write:
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